

Shore power connections to help reduce fire risks.

As pleasure boats have become more complex, onboard electrical safety has become more important. Although this may be something boaters don't think about very often, here is a critical thought to consider: A major percentage of fires on pleasure boats are electrical in origin.



First and most important – only use marine rated cord sets. The cord should have a UL, CE or CSA listing indicating suitable for marine applications. Marine rated cables have special features such as tinned conductors and severe duty jackets that will withstand both the sun exposure and concrete abrasion. Do not fabricate your own cord using cable and plugs even if they are rated for outdoor use. An extension cord from a builder's supply, even one labeled "Heavy Duty," is not an appropriate shore power cord. Improper wiring, lack of an effective seal including anti-wicking features, and untinned wiring at terminations are all reasons we do not permit such equipment. There must be no possibility of the cable pulling free of the plugs (shore cords can become strained when dock lines are not secured carefully) or of the plugs pulling out of the receptacles. Our pedestals provide 30-amp service, so conductors must be #10 AWG or larger to be protected by the supply breaker. ***Again, if your shore cable does not appear to be Listed for Marine use the Dock Captain may disconnect and require replacement.***

You may use twist connector NEMA L5-30 adaptor to power portable tools or equipment on your dock. Remember that your pedestal does not have ground fault protection and you are working around water so use a UL Listed, marine rated connector equipped with a ground fault circuit interrupter is readily available. This is also a must if you operate a boat lift from your pedestal. GFCI devices can be relied on to protect from stray electrical current when they are maintained and tested regularly. Don't rely on equipment that is old, sun damaged, or untested.



Be very careful when using extension cords with this equipment as they may become overheated if less than 10 AWG. Most power cords you buy even for outdoor use are 16 AWG. Heavy duty may be 12 AWG, but these will not be protected from overheating by the pedestal breaker. Check cable and connections regularly, they should not become excessively warm during use.





A likely place an electrical fire can start is at the boat's inlet receptacle. The inlet receptacle is the fixture on the side of the boat, with the hinged cap, where you connect the shore power cable. Since it is often exposed to the elements, the inlet receptacle's condition can deteriorate.

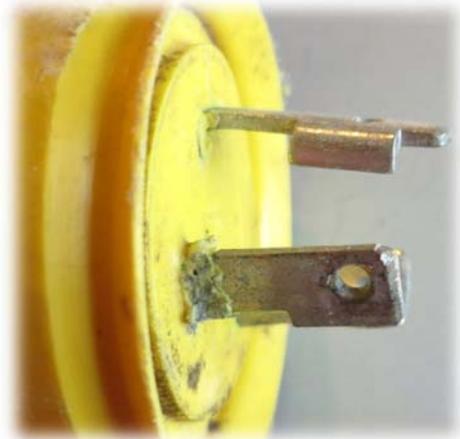
The receptacle can be damaged in a number of ways, including the simple action of plugging the cord into it. Over the years, the clips in the cord that contact the prongs in the receptacle wear out, which can result in a loose connection. If the cord end feels loose when you plug in to the receptacle, it may be time to buy a new cord. That locking ring is important to reduce strain and movement of the prongs. If your cord doesn't have one, get one and use it! If you can't find a ring for your cord, get a new cord

At the boat end, the weight of the cable should be supported and not hanging totally on the fitting. You can loop the cord through one of the rails, so the cable's weight is supported by the rail or use a light piece of line to support the weight.

If the receptacle is in a location where it gets wet, corrosion often occurs, especially if the locking ring on the cord end is missing, or if it isn't properly attached to the receptacle. If rain, saltwater or wash-down water gets into the connection, the metal parts will corrode and that corrosion will cause resistance, which results in heat that can melt the insulation and lead to a disastrous fire.

You can't depend on circuit breakers to provide protection against overheating due to corrosion or loose connectors. A corroded, loose, worn-out receptacle can generate enough heat to start a fire with very little current flowing. In one case, where a receptacle fire destroyed a nice 44-foot motor yacht, the cord and fixture were part of a standard 30-amp shore power connection, and only 12 amps were actually flowing at the time of the fire – less than half the rating of the breakers on the boat and on the dock!

How can a boater protect against this type of risk? The first, and most important, step is inspection. Every time you unplug and plug in your boat, take a good look at the inside of the receptacle, under the cap. The three prongs protrude from a plastic base, and in most newer boats, the base is white. If a prong has been overheating, the plastic around the base of the prong will look melted or discolored from the heat, turning light brown at first and darkening over time. The cord end should be routinely disconnected from the boat so the receptacle can be inspected, and the other end of the cord should be routinely disconnected from the pedestal, so receptacles and both ends of the cord can be inspected. ***The boat you save may be your own!***



In addition to keeping a close eye on that cord-to-receptacle connection and making certain the locking ring is always properly secured, here are some other suggestions to help reduce the risk of electrical fire aboard your boat:

- Make sure all heat-generating devices are plugged into permanently-installed receptacles; never use extension cords.
- Do not use reflector-type heat lamps on board, and never use spring-clamp-style bulb holders that can fall off whatever they're clamped to and potentially start a fire.
- Keep electrical loads to a minimum when not aboard. Turn off the water heater! Never use thermostatically-controlled heaters in gasoline engine or tank spaces. Thermostats can produce sparks. It's not only unsafe, it's also a violation of Federal law.
- Be certain that any electrical work done on your boat is done right! Insist on an electrician who is certified for marine wiring.
- ***If your cord drops into salt water, make sure both the plug and receptacle side are washed thoroughly with fresh water.*** Corrosion forms rapidly and will cause overheating at low current.

Shore power connections to help prevent electrical shock drowning

When you unplug your boat, first, turn off the AC panel's main circuit breakers on your boat to eliminate the risk of an electrical arc when you unplug the cable. Then unplug your shore power cord from the pedestal before unplugging the cord from the boat's receptacle.

Please, please, do not be in a hurry and only unplug the boat end and toss it carelessly on the pier. If that energized power cord's end comes in contact with the water, somebody in the water within eight or ten feet is at risk of remaining conscious but paralyzed by the current - sinks and drowns. If somebody goes in after him - that's victim # 2.

Make it a habit - UNPLUG AT THE PEDSTAL FIRST, ALWAYS. It only takes a moment to do it right. It's worth that little effort considering that not doing it first and leaving it connected could jeopardize someone's life.

When connecting power, reverse the order and before connecting to the pedestal make sure the cord locking ring is secure.

If you do not have a receptacle on your boat with a cord locking feature you must secure the cord in a manner that it cannot be pulled free and fall into the water and a marine listed GFCI must be used at the pedestal.

Avoid using multiple cords, even during maintenance. If you are powering a boat lift or other equipment that remains connected to the pedestal check all connections to make sure they cannot come loose and fall into the water while still plugged into the pedestal. ***The arrangement shown to the right can become very dangerous without a GFCI.***

